

REMARKS

Reexamination and reconsideration of the present application are requested.

Applicants have added new claims 18-21. Accordingly, claims 1-4, 6-14, and 16-21 remain pending in the application.

35 U.S.C. § 103

The Office Action rejected: claims 1-3, 9-11, 13 and 16-17 under 35 U.S.C. § 103 over Holmes et al. U.S. Patent 4,627,009 (“Holmes”) in view of Kawashima U.S. Patent No. 5,955,739 (“Kawashima”) and Staehle U.S. Patent 4,277,133 (“Staehle”); claims 7-8 and 12 under 35 U.S.C. § 103 over Holmes in view of Kawashima, Staehle, and Schram U.S. Patent 4,938,654 (“Schram”); and claims 4, 6 and 14 over Holmes in view of Kawashima, Staehle and An U.S. Patent 5,852,300 (“An”).

Applicants respectfully traverse those rejections for at least the following reasons.

Claim 1

Among other things, the microscope of claim 1 includes at least two wafer stoppers at a radius distance of a round portion of the semiconductor wafer from a central pivot of the semiconductor wafer.

Applicants respectfully submit that no device including such a feature is disclosed or suggested by Holmes, Kawashima, Staehle or any combination thereof.

The Office Action fairly admits that Holmes and Kawashima fail to disclose such a feature, but states that such a feature is “suggested” by Staehle.

Applicants respectfully disagree.

At the outset, elements 34 and 36 in Staehle do not define a wafer stopper as recited in claim 1. Staehle merely shows a side clip 34 with an inserting peg 36 that clips on top of a top surface of a slide 32, as clearly shown FIG. 1, for example. Indeed, the clip 34 in Staehle would be totally unsuitable for holding a semiconductor wafer onto a stage, nor does anything at all in Staehle suggest stoppers disposed at an edge or radius distance of a slide - or certainly of a wafer!

The Office Action states that:

“one skilled in the art will recognize that (s)he will arrange the stop device (34, 36) for maintaining the slide (32) on the platform (28) having two curved legs (34) in a suitable position so that the legs will encircle the central pivot point of the wafer on the system of Holmes et al.”

Applicants respectfully request that the Examiner provide some citation to something in the prior art in support of this conjecture. A rejection under 35 U.S.C. § 103 must be based on objective evidence of record, and cannot be supported merely on subjective belief and unknown authority. “The examiner can satisfy the burden of showing obviousness of the combination only by showing some objective teaching in the prior art or that knowledge generally available to one of ordinary skill in the art would lead the individual to combine the relevant teachings of the references,” In re Lee 61 U.S.P.Q.2d 1430, 1434 (2002) (emphasis added).

Accordingly, Applicants respectfully request that the Examiner provide some citation to some objective teaching found in the prior art (and not just the Examiner’s personal opinions) that would have motivated one of ordinary skill in the art at the time the invention was made to modify Staeble’s side clip 34 to be located at a radius distance of a round portion of the semiconductor wafer, instead of clamping down on a top surface, and then to incorporate Staeble’s newly-modified clip into Holmes’ microscope (as modified by Kawashima). Otherwise, Applicants respectfully request that the Examiner allow claim 1.

Claims 2-3

Claims 2-3 depend from claim 1 and are deemed patentable for at least the reasons set forth above with respect to claim 1.

Claims 4 and 6

Claims 4 and 6 depend from claim 1. Applicants respectfully submit that An

does not remedy the shortcomings of Holmes, Kawashima, Staehle with respect to claim 1, as discussed above. Accordingly, claims 4 and 6 are deemed patentable for at least the reasons set forth above with respect to claim 1, and for the following additional reasons.

Applicants respectfully submit that no proper motivation or suggestion has been supplied from the prior art to modify the microscope of Holmes (as already modified by Kawashima) to further include either a wafer detecting sensor (claim 4) or a zone detecting sensor (claim 6).

The Office Action states that:

“the use of detecting elements with the movable stage for detecting a flat region/area of a wafer and thus the presence of a wafer is (sic) a wafer inspection system is known in the art as can be seen in the system provided by An.”

Applicants respectfully disagree.

At most, An merely shows a flat zone detector was known in the wafer probe tester art. An does not show anything at all about the microscope art to which claim 1 pertains. Moreover, Applicants see no citation in the Office Action to anything in An which supposedly mentions a movable stage. Furthermore, the Office Action fails to cite anything in Holmes or any other pertinent prior art reference that even suggests the desirability of detecting a flat zone in a microscope or visual inspection station, such as is claimed here.

Accordingly, for at least these reasons, Applicants respectfully submit that claims 4 and 6 are patentable over any proper combination of the cited references.

Claims 7 and 8

Claims 7 and 8 depend from claim 1. Applicants respectfully submit that Schram does not remedy the shortcomings of Holmes, Kawashima, Staehle with respect to claim 1, as discussed above. Accordingly, claims 7 and 8 are deemed

patentable for at least the reasons set forth above with respect to claim 1.

Claim 9

Among other things, the inspection station of claim 9 includes at least one wafer stopper for aligning the semiconductor wafer on the platform.

In similarity to the discussion above with respect to claim 1, Applicants respectfully submit that no inspection station including such a feature is disclosed or suggested by Holmes, Kawashima, Staehle, or any combination thereof.

Accordingly, for at least these reasons, Applicants respectfully submit that the inspection station of claim 9 is patentable over any combination of Holmes, Kawashima, and Staehle,

Claims 10, 11, 13, 16 and 17

Claims 10, 11, 13, 16 and 17 depend from claim 9 and are each deemed patentable for at least the reasons set forth above with respect to claim 9.

Claim 12

Claim 12 depends from claim 9. Applicants respectfully submit that Schram does not remedy the shortcomings of Holmes, Kawashima, Staehle with respect to claim 9, as discussed above. Accordingly, claim 12 is deemed patentable for at least the reasons set forth above with respect to claim 9.

Claim 14

Claim 14 depends from claim 1. Applicants respectfully submit that An does not remedy the shortcomings of Holmes, Kawashima, Staehle with respect to claim 9, as discussed above. Accordingly, claim 14 is deemed patentable for at least the reasons set forth above with respect to claim 9, and for the following additional reasons.

As explained above with respect to claims 4 and 6, Applicants respectfully submit that no proper motivation or suggestion has been supplied from the prior art to modify the microscope of Holmes (as already modified by Kawashima) to further include a wafer detecting sensor.

Accordingly, for at least these reasons, Applicants respectfully submit that

claim 14 is patentable over any proper combination of the cited references.

NEW CLAIMS 18-21

Claim 18

Claim 18 depends from claim 1 and is deemed patentable for at least the reasons set forth above with respect to claim 1, and for the following additional reasons.

Among other things, the microscope of claim 18 includes at least two air cylinders each configured to move a corresponding one of the wafer stoppers forward and backward.

Such a feature is clearly disclosed, for example, in paragraph [0044] on page 11, and an exemplary embodiment is shown as elements 135 in FIG. 9.

Applicants respectfully submit that no microscope including such a feature is disclosed or suggested by Holmes, Kawashima, Staehle, - or any of the other cited references - or by any combination thereof.

Accordingly, for at least these reasons, Applicants respectfully submit that the microscope of claim 18 is patentable over the cited prior art.

Claim 19

Claim 19 depends from claim 9 and is deemed patentable for at least the reasons set forth above with respect to claim 9, and for the following additional reasons.

Among other things, the inspection station of claim 19 includes at least one air cylinder configured to move the wafer stopper forward and backward.

Such a feature is clearly disclosed, for example, in paragraph [0044] on page 11, and an exemplary embodiment is shown as elements 135 in FIG. 9.

Applicants respectfully submit that no inspection station including such a feature is disclosed or suggested by Holmes, Kawashima, Staehle - or any of the other cited references - or in any combination thereof.

Accordingly, for at least these reasons, Applicants respectfully submit that the

microscope of claim 19 is patentable over the cited prior art.

Claim 20

Among other things, the inspection station of claim 20 includes stage moving means for moving the semiconductor wafer in an x-axis direction, a y-axis direction, and a z-axis direction.

Such a feature is clearly disclosed, for example, in paragraphs [0033] through [0040], paragraph [0052], and an exemplary embodiment is shown in FIGs 7 and 8.

Applicants respectfully submit that no microscope including such a feature is disclosed or suggested by Holmes, Kawashima, Staehele - or any of the other cited references - or in any combination thereof.

Indeed, Holmes not only discloses an apparatus that does not move in the Z-axis direction, Holmes clearly and explicitly **teaches away from** an apparatus with any Z-axis movement (see, e.g., col. 1, lines 42-56), and therefore is not properly combinable with any reference to produce such an apparatus.

Accordingly, for at least these reasons, Applicants respectfully submit that the inspection station of claim 20 is patentable over the cited prior art.

Claim 21

Claim 21 depends from claim 20 and is deemed patentable for at least the reasons set forth above with respect to claim 20, and for the following additional reasons.

Among other things, the inspection station of claim 21 includes at least two wafer stoppers adapted to align the semiconductor wafer on the stage.

As explained above with respect to claim 1, Applicants respectfully submit that no inspection station including such a feature is disclosed or suggested by Holmes, Kawashima, Staehele, or any combination thereof.

Accordingly, for at least these reasons, Applicants respectfully submit that the inspection station of claim 21 is patentable over the cited prior art.

CONCLUSION


In view of the foregoing explanations, Applicants respectfully request that the Examiner reconsider and reexamine the present application, allow claims 1-4, 6-14, and 16-21, and pass the application to issue. In the event that there are any outstanding matters remaining in the present application, the Examiner is invited to contact Kenneth D. Springer (Reg. No. 39,843) at (703) 715-0870 to discuss these matters.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies to charge payment or credit any overpayment to Deposit Account No. 50-0238 for any additional fees required under 37 C.F.R. § 1.16 or under 37 C.F.R. § 1.17, particularly extension of time fees.

Respectfully submitted,

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